NC STATE UNIVERSITY

JTATM

JOURNAL OF TEXTILE AND APPAREL, TECHNOLOGY AND MANAGEMENT

Volume 5, Issue 2, Summer2006

An Examination of U.S. Cotton Product Imports Trade Patterns

Yejuan Jin
Department of Textiles, Merchandising, and Interiors, University of Georgia
Athens, GA 30602

Jan M. Hathcote, Ph.D., Associate Professor
224 Dawson Hall, University of Georgia
Athens, GA 30602 Phone: 706/542-4907
Fax: 706/542-4862
E-mail: jhathcote@fcs.uga.edu

Soyoung Kim, Ph.D., Associate Professor
Department of Textiles, Merchandising, and Interiors
University of Georgia, Athens, GA 30602
Fax: 706/542-4862
Email skim@fcs.usu.edu

ABSTRACT

This study examined important environmental factors influencing the cotton export performance in the current top ten countries supplying cotton products to the United States, including Mexico, China, India, Honduras, Pakistan, Bangladesh, Dominican Republic, El Salvador, Indonesia, and Guatemala, using Austin's (1990) Environmental Analysis Framework (EAF). The research used secondary data collected from various government sources with a 26 year time period from 1974 to 2000. The results indicated that three variables, GNP, Exchange Rates, and Roads, have significant positive impact on U.S. cotton import dollar volume, while Tariff Rates have significant negative impacts on U.S. cotton import dollar volume. The findings have important managerial implications to U.S. cotton importers and retailers, and for the ten cotton-exporting countries.

Keywords: Cotton, international trade, Environmental Analysis Framework, import, export, competitive advantage, GNP, exchange rate, labor cost, roads, merchant marine, tariff rate, quota

INTRODUCTION

According to a survey conducted by Cotton Incorporation (2001), 75% of consumers consider fiber content as one of their top concerns when they are purchasing clothing. Among all natural fibers, cotton is the most popular fiber frequently used in clothing, interior decoration, and industry due to its unique properties—its softness, breathability, absorbency, durability, and other added values such as wrinkle, oil or water resistance. Cotton currently holds the strongest position in the United States with a

market share of 60% (Cotton Inc., 2001). Although the United States is the second largest cotton-fiber producer, most final products made from cotton are imported. In 2000, the United States imported $36,681 million of cotton products including apparel and non-apparel (Office of Textile and Apparel, 2002). Among all cotton suppliers, the top ten—Mexico, China, India, Honduras, Pakistan, Bangladesh, Dominican Republic, El Salvador, Indonesia, and Guatemala—supply about 58% of total U.S. cotton imports.

In 2001 Mexico, China, and India were the three major shippers who provided, respectively, 13%, 12%, and 5% of total cotton products for the United States. Mexico, a member of NAFTA (The North American Free Trade Agreement), has some unique privileges in that most of its textile products are tariff and quota free. China, the second largest cotton producer in the world, has abundant cheap labor for textile and apparel manufacture. Four Caribbean countries—Honduras, Dominican Republic, El Salvador, and Guatemala—have expanded their exports to the United States at substantial growth rates in recent years due to their proximity to the United States and several multilateral agreements such as the 9807 program and the United-States-Caribbean Basin Trade Partnership Act (CBTPA), which took effect a few years ago. In 2001, the four Caribbean countries provided 11% of the total cotton product imports for the United States (Office of Textile and Apparel, 2002).

Accordingly, the following guiding question emerged: Among these strong competitors in cotton exports, who has more competitive advantages? In order to answer this question, in this study we compared the top ten cotton product exporters to the United States, analyzed the situation, and predicted future winners. The current top ten cotton-product suppliers to the United States include: Mexico, China, India, Honduras, Pakistan, Bangladesh, Dominican Republic, El Salvador, Indonesia, and Guatemala. Specifically, this research investigated the impact of several external environmental factors on U.S. cotton product import volumes from the ten cotton-producing countries. In addition, the manner in which these factors impacted on cotton product trade volumes from 1974 to 2000 was examined. Lastly, future trends and changes of cotton product trade patterns between the United States and the aforementioned ten countries were predicted.

REVIEW OF NATIONAL ADVANTAGE THEORIES

Porter's 1990 theory "the competitive advantage of nations" established a diamond model to illustrate the determinants of national competitive advantage. In the model, Porter divided the determinants of national competitive advantages into four broad categories: a) factor conditions which include all factors of production—human resources, physical resources, knowledge resources, capital resources and infrastructure; b) demand conditions; c) related and supporting industries; and d) firm strategy, structure and rivalry. He stated that "nations are most likely to succeed in industries or industry segments where the national 'diamond,'…is most favorable" (Porter, 1990, p. 72). Two additional factors, chance and government, have important influences on each category and play an important role in national advantage. Porter's diamond model has been widely used to explain national competitive advantage for developed countries.

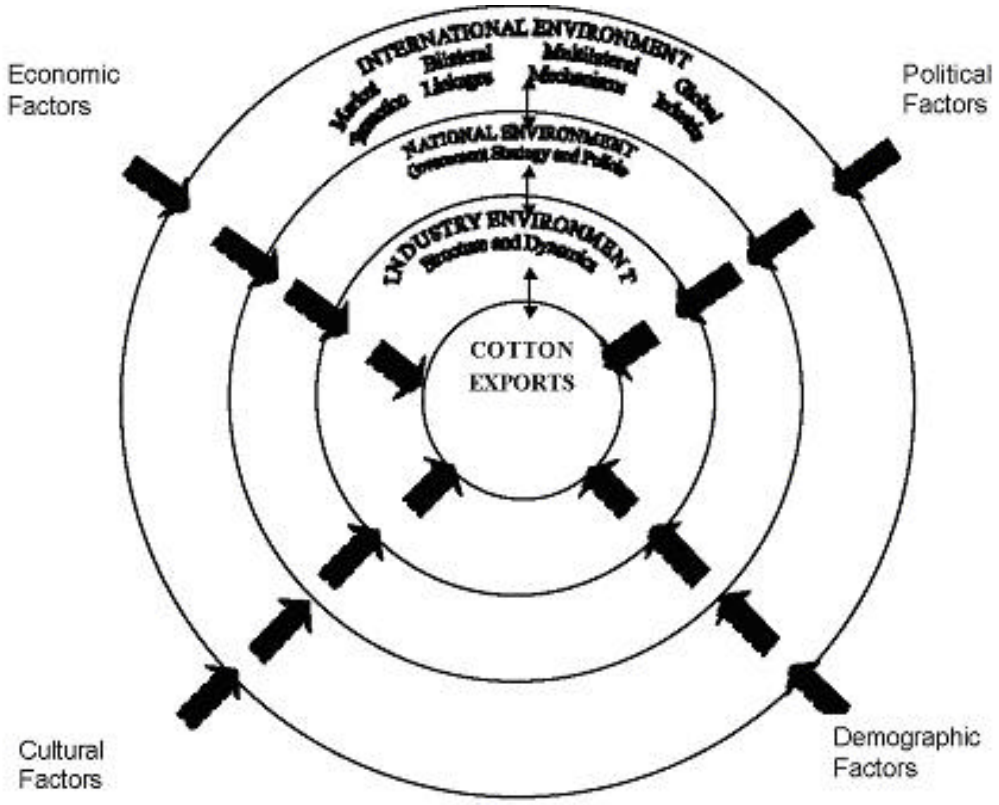
Austin (1990) pointed out that Porter's diamond model was based on the markets, industries, and experiences of developed countries and was not applicable to developing countries. He argued that fundamental differences existed between developed nations and less developed nations in the business environment. In less developed countries, the success of a firm is significantly influenced by environmental factors such as macroeconomic environment, political environment, socioeconomic conditions, cultural diversity, and development levels. He went further to develop the Environmental Analysis Framework (EAF), which is specifically

designed to help companies aiming to invest and expand their businesses in less developed countries to analyze the local business environment. Although the EAF model is designed for international expansion from the point of view of investors, the researchers found that the EAF model can be adapted for the use of understanding a developing country's national advantage through identifying which external forces impact a specific industry.

THE ENVIRONMENTAL ANALYSIS FRAMEWORK (EAF)

The researchers adapted the EAF model to study the impact of environmental factors on cotton exports from developing countries to the United States (Figure 1). According to the model, four broad categories of environmental factors—economic, political, cultural, and demographic—are fundamental external forces to the success of a nation's cotton exports to the United States on two levels, the international and national levels.

Figure 1: Adapted Environmental Analysis Framework (EAF) Model



Economic Factors

Economic factors, the first category of environmental factors, include influences that form a nation's economic characteristics. Among many subcategories of this factor, five factors, natural resources, labor, capital, infrastructure, and geopolitical links, are most likely to have important impacts on a nation's cotton export performance.

Labor

Labor cost has been regarded as the main cause of trade flow as well as the determinant of the value of merchandise, as suggested in Ricardo's labor theory of value

(1817). The availability of abundant unskilled labor and the consequent low cost labor in developing countries created one of the greatest comparative advantages (Austin, 1990). Because the textile industry, particularly the apparel industry, is most likely to be a labor-intensive industry, labor costs play a significant role in determining the final cost of goods. Today retailers in developed countries have increasingly tried to source textile products from developing countries with lower labor cost (Dickerson, 1995). It seems clear that wage differences contribute to the national advantages in cotton exports.

Capital: GNP and exchange rates

Austin (1990) stated that the shortage of capital in developing countries limits the availability of bank credit and investment in capital-intensive production. In addition, the availability of capital directly influences productivity. Cotton fiber, fabric, and apparel productivity are heavily influenced by the advancement of technology. A nation's capital level is measured in many ways: gross domestic product (GDP); gross national product (GNP); income distribution; and income and savings (Austin, 1990). Among these factors, the GNP—the dollar value of a country's final output of goods and services in a year, which reflects a country's economic size and strengths (The World Bank Group, 2002)—is one of the best indicators reflecting capital availability at the national level. Leamer (1984) observed that capital measure was highly correlated with GNP.

Foreign exchange, another form of capital in developing countries, plays an important role in national advantage (Austin, 1990). In developing countries, the exchange rate is not set by the forces of supply and demand but controlled by the government, which can increase its exchange rate to create a competitive advantage for its exports. Researchers (e.g., Ghadar, Davidson, & Feigenoff, 1987; Toyne, Arpan, Barnett, Ricks & Shimp, 1984) have claimed that trade flows were significantly affected by changes in exchange rates. However, Ogun (1996) found that exchange rate misalignment had a negative impact on exports and imports. For products with low profit margins, such as cotton textile and apparel products, even small changes in the value of the dollar have a substantial impact on trade flow (Ghadar et al., 1987).

Infrastructure: merchant marine and roads

Infrastructure includes national physical facilities such as transportation, postal, telecommunications, electrical, and other utilities. A poor infrastructure contributes to national competitive disadvantage for international trade in developing countries (Austin, 1990). Deficient infrastructure, found in numerous developing countries, negatively influences a country's volume of exports. A favorable physical infrastructure will bring benefits to an expanding global market (Cornia, 2001). A good infrastructure, especially in a logistics-related field such as roads and railroads, is an important comparative advantage. Having excellent logistics not only allows for efficient allocation of resources but also accelerates merchandise delivery and reduces transportation costs (Seyoum, 2000). Among all possible indicators of a nation's infrastructure level, highways, railroads, and merchant marine are main contributors to the degree of infrastructure development.

Political factors, International links—tariff rate and quota

Among four political factors—instability, ideology, institutions, and international links—international links seem most likely to have an important influence on a nation's cotton export performance. International links include both political links (e.g., colonial ties between Britain and India) and economic links (e.g., multilateral and bilateral capital flows and trade agreements with foreign entities) (Austin, 1990). A wide variety of economic links, including multilateral and bilateral trade agreements and trade bills, have a

significant effect on the export performance of developing countries. The multilateral agreements, that have important impact on cotton trade, include the General Agreements on Tariffs and Trade (GATT), the Multi-fiber Arrangement (MFA), the North American Free Trade Agreement (NAFTA), and the Agreement on Textile and Clothing (ATC). Other national strategies include trade bills such as the United-States-Caribbean Basin Trade Partnership Act (CBTPA) and the African Growth and Opportunity Act (AGOA). Numerous researchers have studied the impacts of different multilateral and bilateral agreements and trade acts on international trade (Konno, 2003; Heron, 2002; Sanchez, 2002; Eder, 2001; & Wall, 2003; etc).

METHODOLOGY

This study applied a simple linear model to secondary data selected systematically every two years from 1974 to 2001, in order to examine relationships between U.S. cotton import dollar volumes from the ten selected countries (in terms of MFA notional category 30: see Appendix A) and attributes of the suppliers. Seven attributes proposed to most likely affect U.S. cotton import volume from each country were: GNP, exchange rate, labor cost, merchant marine, roads, tariff rates, and quota. The following equation is the simple linear model used in this study.

$$Y = ß_0 + ß_1 X_1 + ß_2 X_2 + ß_3 X_3 + ß_4 X_4 + ß_5 X_5 + ß_6 X_6 + ß_7 X_7 + e$$

Where:

Y: the F.O.B. dollar value of U.S. cotton product imports from a country,
X_1: the GNP in a country,
X_2: the exchange rate of local currency with one U.S. dollar,
X_3: the labor cost in a country (hourly wages in the manufacturing sector),
X_4: the merchant marine—capacity of carrying goods by ships—in a country,
X_5: the total roads including railroads and highways in a country,
X_6: actual U.S. tariff rate to the textile imports from a country,
X_7: quota limit on cotton imports from a country (dummy variable),
ß : estimated parameters,
e : random error.

The expected signs for each variable are shown in the following equation.

Expected sign: [+] [+] [-] [+] [+] [-] [-]

Equation: $Y = ß_0 + ß_1 X_1 + ß_2 X_2 + ß_3 X_3 + ß_4 X_4 + ß_5 X_5 + ß_6 X_6 + ß_7 X_7 + e$

The linear model was used in this study because previous research found that a simple linear model effectively explained the relationships between trade data and factor endowments of comparative advantage (Leamer, 1984).

DATA COLLECTION

This study used secondary data collected from various government and non-government sources. The ten countries selected for this study were all developing countries and top ten cotton-product suppliers to the United States in 2000. The dataset for the research contains 140 observations and covers ten countries over a 26-year time period from 1974 to 2000. The data of U.S. cotton import dollar values from ten countries from 1980 to 2000 were obtained from the Office of Textile and Apparel. The remaining data (from 1974 to 1978) were extracted from the database of U.S. imports 1972-2001 by SITC code compiled by Robert C. Feenstra from the National Bureau of Economic Research. GNP data for ten countries were obtained from the 2002 World Development

Indicator, a CD-Rom issued by the World Bank. The exchange rates and labor cost data were extracted from Statistical Yearbooks compiled by the United Nations. However, various country statistical yearbooks were consulted to estimate the missing data of labor costs. Labor costs were all converted to U.S. dollars.

The merchant marine data were obtained from the Register of Ships published by Lloyd's Register of Shipping. The World Factbook issued by the Central Intelligence Agency was used to extract the roads data. The tariff rates were calculated by total actual duty paid for textile imports divided by total actual textile import customs value. The data for tariff rates were collected from the database of U.S. imports 1972-2001 by SITC code, compiled by Robert C. Feenstra from the National Bureau of Economic Research. Quota information came from various years of U.S. Imports of Textile and Apparel Under the Multi-fiber Arrangement, the annual publication issued by USITC.

ESTIMATION RESULTS FOR THE MODEL

In order to detect any multicollinearity problem, we first conducted a Pearson correlation analysis. The results showed that GNP (X_1) had a high correlation of 0.69 and 0.66 respectively with merchant marine (X_4) and roads (X_5), respectively (Table 1). All other asymptotic correlations were less than 0.60. The results of Pearson correlation analysis indicate that overparameterization may be caused by high parameter correlations among X_1, X_4, and X_5 if they are put in the same model. Therefore, two separate models were run. The results are presented in Table 2.

Table 1 Correlation Analysis

	X_1 (GNP)	X_2 (ER)	X_3 (LC)	X_4 (MM)	X_5 (roads)	X_6 (tariff)	X_7 (quota)	Y_1 (cotton import $)
X_1	—							
X_2	0.26**	—						
X_3	0.23**	0.37**	—					
X_4	0.69***	0.18*	-0.14	—				
X_5	0.66***	-0.03	-0.13	0.60***	—			
X_6	-0.21*	-0.21*	-0.18*	-0.05	-0.08	—		
X_7	0.33***	0.16**	0.28***	0.27**	0.31***	-0.11	—	
Y_1	0.61**	0.56***	0.35***	0.32***	0.30***	-0.47***	0.35***	—

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
*** Correlation is significant at the 0.001 level (2-tailed).

GNP = Gross National Product
ER = Exchange Rate
LC = Labor Cost
MM = Merchant Marine

Table 2 Linear Regression Analysis

	Model 1 Standardized coefficients	Model 2 Standardized coefficients	Model 3 Standardized coefficients
Parameter estimates	(Y1-A)	(Y1-A)	(Y2-B)
GNP (X1)		0.41*** (0.000)	0.46*** (0.000)
Exchange rate (X2)	0.40*** (0.000)	0.36*** (0.000)	0.15* (0.022)
Labor cost (X3)	0.16* (0.020)	0.05 (0.431)	-0.11 (0.106)
Merchant marine (X4)	0.10 (0.198)		
Roads (X5)	0.21** (0.005)		
Tariff (X6)	-0.32*** (0.000)	-0.29*** (0.000)	-0.27*** (0.000)
Quota (X7)	0.11 (0.084)	0.11 (0.058)	0.26*** (0.000)
R-square	0.57	0.64	0.53

(Y1-A) = Y1-cotton import dollar value
(Y2-B) = Y2-cotton import quantity, sq meters

In Model 1 ($Y_1 = ß_0 + ß_2 X_2 + ß_3 X_3 + ß_4X_4 + ß_5 X_5 + ß_6 X_6 + ß_7 X_7 + e$), GNP was not included in order to avoid any multicollinearity problem. The multiple coefficient of determination (adjusted R-square=0.55) showed that 55% of the variance was explained by this model. Three variables, exchange rates, labor costs, and roads were found to be significantly related to the U.S. cotton import volume with parameters estimates of 0.40, 0.16, and 0.21, respectively. This means that high exchange rates, high labor costs, and a higher number of roads have significant positive relationships with cotton import volumes. On the other hand, tariff rate had a significantly negative relationship with cotton import volume (r = -0.32), suggesting that low tariffs increase the cotton import volume when holding other variables constant. Merchant marine and quota were not significantly related to cotton import volumes.

Model 2 ($Y_1 = ß_0 + ß_1 X_1 + ß_2 X_2 + ß_3 X_3 + ß_6 X_6 + ß_7 X_7 + e$) included GNP but not merchant marine and roads. Model 2 had a higher R-square value than Model 1 at 0.63, although Model 2 had only five variables. This finding suggests that GNP was a better indicator than merchant marine and roads in explaining cotton import volumes. The results for exchange rates, tariffs, quotas, and U.S. cotton product import dollar value were the same as Model 1. Surprisingly, labor cost was found to have no significant relationship with cotton export volumes.

One-Way ANOVA Test

Table 3 presents the results of one-way ANOVA analysis on the three most important variables, GNP, tariff rates, and exchange rates for three time periods: 1970s (1974—1980), 1980s (1981—1990), and

1990s (1991—2000). Scheffe's Multiple Range Tests were applied to compare the ten countries in terms of the means of the three variables. We observed the relatively small changes in GNP among the ten economies from the 1970s to the 1990s for all countries, although significant changes occurred for individual economies. The GNPs of China, India, and Mexico are significantly different from others. The values of GNPs in these three countries were much higher than others, while Bangladesh, Pakistan, and four Caribbean countries had relatively low GNPs compared with the others.

Table 3 One -way ANOVA Analysis

	GNP (billion $)			Tariff rates (percentage)			Exchange Rates		
Means	**1970s**	**1980s**	**1990s**	**1970s**	**1980s**	**1990s**	**1970s**	**1980s**	**1990s**
Bangladesh	13.3c	22.7c,d	39.1c	0a	11.8a	15.4c,d	13.55a	28.84a	44.00a
China	161a	284a	752a	27.5d	16.4a,b	11b,c	1.69a	3.23a	7.80a
Dominican Republic	4.5c	7.1d	12.9c	25.5d	21.8b	8.4b	1.00a	3.91a	14.28a
El Salvador	2.6c	3.9d	9.8c	28d	17.2a,b	10.4b,c	2.50a	4.34a	8.69a
Guatemala	5.3c	8.0d	15.3c	13.5b,c	16a,b	13.4b,c,d	1.00a	2.20a	6.23a
Honduras	1.6c	3.2d	4.2c	21c,d	20.8a,b	9b	2.00a	2.42a	10.77a
India	129a,b	250a,b	363b	11.5b	13.8a,b	12.6b,c	8.27a	12.97a	35.78a
Indonesia	48b,c	8.9c	152b,c	19.8c,d	21.4b	17.8d	520.44b	1299.69b	4993.71b
Mexico	119a,b	180b	409b	23.3c,d	18.4a,b	3.2a	19.61a	1184.34a,b	6536.00b
Pakistan	15.7c	33.8c,d	55.8c	12.25b	12.8a,b	13b,c,d	9.91a	16.45a	37.41a

Note: The table presents the mean values for three variables by country. Scheffe's grouping is indicated in superscript above the mean values, significance level: 0.05.

Tariff rate, one of the variables which had the most significant negative impact on cotton export volumes, changed dramatically both among countries and within each individual country from the 1970s to the 1990s. From 1974 to 1980, the tariff rates of textile products from Bangladesh, Pakistan, India, and Guatemala were significantly lower than the others. On the other hand, textile products of China, the Dominican Republic, El Salvador, Honduras, Indonesia, and Mexico had significantly higher tariff rates than the others. From 1980 to 1990, the average tariff rates in each country were quite close to each other. Only the tariff rate of Bangladesh products was significantly different from the others with the lowest rate of 11.8%; however, Dominican Republic and Indonesia had significantly higher tariff rates with 21.8% and 21.4%, respectively, while the average tariff rates on textile products from other countries were not statistically different from each other. From 1990 to 2000, the average tariff rates were much lower than those in previous years. The relatively low tariff rates on textile products from Mexico, Dominican Republic,

and Honduras were significantly different from others. Indonesia had the highest tariff rate of 17.8% in the 1990s.

As shown in Table 3, all ten countries raised their exchange rates in different degrees since 1974. The increases were moderate for China, El Salvador, Guatemala, Honduras, India, Pakistan, and Bangladesh, whose exchange rates in the 1990s were about 4 to 5 times of those in 1970s. On the contrary, Mexico's and Indonesia's increases in the exchange rate were prominent; the exchange rate of the Mexican peso to the U.S. dollar changed most significantly from 19.61 in the 1970s to 6536.00 in the 1990s, followed by Indonesia from 520.44 to 4993.71, then by the Dominican Republic from 1.00 to 14.28. The exchange rates of Indonesia and Mexico were significantly different from the others.

CONCLUSIONS AND DISCUSSIONS

The results of this research indicate that four environmental factors—GNP, tariff rates, exchange rates, and roads—significantly influence the cotton export volumes in the top ten cotton suppliers to the United States. Two factors, GNP and tariff rates, had the most significant impact on the U.S. cotton import volumes, followed by exchange rates. We also found that the U.S. cotton import dollar value was positively related to the road factor but not significantly by the merchant marine factor.

GNP was one of the two factors that most significantly affected cotton imports. The parameter estimate was positive, suggesting that a country will export more cotton products to the United States if the country has a higher GNP than others. This finding indicates that the larger a country is, the more cotton products it will produce and export. China, India, and Mexico had comparative advantages over others in GNP during the twenty-six year period, which is consistent with the finding that these three countries have consistently been the top three cotton suppliers to the United States.

Tariff rate was the other major factor that influenced U.S. cotton imports. The negative sign of the parameter estimate indicates that low tariff rates will stimulate cotton imports. From 1974 to 2000, the United States adjusted the tariff rates on cotton imports from each country to different extents.

The results also suggested that the exchange rate has a positive impact on U.S. cotton imports. Mexico and Indonesia raised their exchange rates most significantly from 1980 to 2000, meaning that both countries decreased the unit price of their cotton products dramatically at that time. In doing so, they gained a strong comparative advantage over others on cotton exports.

The Road factor, an important indicator of a country's infrastructure, was found to have a positive relationship with U.S. cotton imports. This finding suggests that a good infrastructure will improve a country's export performance.

Quotas, as a dummy variable, were found to be insignificantly related to U.S. cotton import dollar value. Because the United States did not impose a quota on every item of cotton, a country could always export more products that are not subject to quantitative limits. Therefore, the U.S. cotton import quantity can always increase regardless of whether or not a quota is imposed.

IMPLICATIONS AND SUGGESTIONS

This research examined four important environmental factors of ten developing countries (GNP, exchange rates, tariff rates, and roads) for their impacts on U.S. cotton import volumes. The results of this study have important implications for U.S. importers and retailers, the ten cotton suppliers, and policy makers.

The findings indicate that in these ten developing countries, a high GNP increases cotton exports. In other words, the cotton export volume is limited by the size of a country's economy. No matter how many competitive advantages a country has,

it has a limited production capacity. This finding implies that U.S importers and retailers should be aware that when ordering from a country with low GNP there is always a potential problem with the country's production capacity becoming prematurely saturated. In addition, more orders will cause problems, such as delivery or quality problems, once the production capacity is reached. A large retailer or importer should consider the size of a supplier's economy when he/she decides to place buying orders. The most secure way is to distribute orders among different countries; thus, the buyer can be flexible if trade policies change or capacity is saturated.

The significant negative relationship between tariff rates and U.S. cotton import volumes implies that the adjustment of tariff rates is a very effective method to control international trade volumes. The U.S. government could reverse the trade flow by changing tariff rates. This finding also has important implications for the ten countries supplying cotton products. The positive relationship between exchange rates and U.S. cotton import volumes suggests that increasing a currency's exchange rate will improve the country's export performance. The findings of this study, with respect to the Road factor, suggest that an effective road network is necessary to improve international trade performances. Therefore, a country should develop its infrastructure in order to increase its cotton export volume.

REFERENCES

Austin, J. E. (1990). *Managing in Developing Countries: Strategic Analysis and Operating Techniques,* New York: The Free Press, a Division of Macmillan, Inc.

Cornia, G. A. (2001). Globalization and health: results and option, *Bulletin of the World Health Organization, 79*(9).

Cotton Incorporated (2001). Fiber content is important to consumers, [Electronic version]. *Textile Consumer, 23*, 3-4.

Dickerson, K. (1995). *Textiles and apparel in the global economy,* 2nd ed. New Jersey: Prentice-mall, Inc.

Eder, M. (2001). Deeper concessions and rising barriers to entry: new regionalism for Turkey and Mexico, *Studies in Comparative International Development, 36* (3), 29.

Ghadar, F. Davidson, W. & Feigenoff, C. (1987). *U.S. industrial competitiveness: The case of the textile and apparel industries,* Lexington, MA. Lexington Books.

Heron, T. (2002). The US—Caribbean apparel connection and the politics of 'NAFTA parity', *Third World Quarterly, 23* (4), 753.

Konno, T. & Fukushige, M. (2003). Did NAFTA cause the structural changes in bilateral import functions between the US and Mexico? *Journal of Policy Modeling*, *25* (1), 53.

Leamer, E. E. (1984). *Sources of International Comparative Advantage: Theory and Evidence*. London : The MIT Press.

Office of Textile and Apparel (2002, October 30). *Major Shippers Report, Category 30: Cotton Products,* available from http://www.otexa.ita.doc.gov

Ogun, O. (1996). *PPP exchange rate, misalignment and export growth,* Nigeria, unpublished result.

Pelzman, J. (1995). The Uruguay round and textile and apparel trade: an exercise in wishful thinking, *International Business in the 21st Century, 1*, 181-196.

Porter, M. E. (1990). *The competitive advantage of nations*. London : Macmillan.

Ricardo, D. (1817). *Principles of political economy and taxation.* London : Everyman's Edition.

Sanchez, R.A. (2002). Governance, trade, and the environment in the context of NAFTA, *American Behavioral Scientist, 45* (9), 1369.

Seyoum, B. (2000). *Export-Import theory, practices, and procedures*, New York : International Business Press, an imprint of The Haworth Press, Inc.

The World Bank, (2002). *World development indicator*. Washington, D.C.: IBRD.

Toyne, B. Arpan, J. Barnett, A. Ricks, D. & Shimp, T. (1984). *The Global Textile Industry*, London: George Allen & Unwin.

USITC, (1983-1999). *U.S. imports of textiles and apparel products under the Multi-fiber Arrangement.* Washington, D.C.: USITC.

Wall, H. J. (2003). NAFTA and the geography of North American trade, *Review (Federal Reserve Bank of Saint Louis), 85* (2), 13.